Installation Manual

ROLTEC™ ELECTRIC HOPPER CONVERSION

Thank you for purchasing a ROLTEC™ Electric Hopper Conversion system. ACI has manufactured this product with pride using superior quality materials and strict quality control manufacturing processes.

NOTICE TO INSTALLER:
It is recommended you take the time to read these instructions carefully before installing or using this Electric Hopper Conversion. Often improvements are made without prior notice. Always handle components with care to avoid personal injury or damage to components. When done, these instructions must be given to the end user.

NOTICE TO END USERS:
Read these instructions and understand this Electric Hopper Conversion before using it. Store these instructions for future use.

Tested. Trusted. Guaranteed.

Inspection and Maintenance

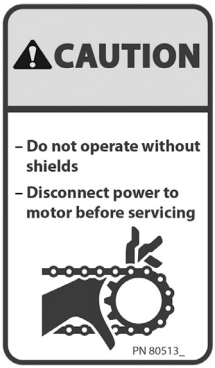
- Periodic preventive maintenance should be practiced. Inspect system often for proper operation.
- Periodically inspect all components for loose or worn parts and replace as needed.
- Always use genuine Agri-Cover, Inc. replacement parts if repairs are needed.
- Periodically check the tightness of mounting bolts and electrical connections. Remove any dirt or corrosion that may have accumulated on the electrical connections.
- Do not attempt to disassemble the motor. Disassembly will void warranty.
- Periodically inspect chain tension and lubricate chain.
- Periodically grease zerk fittings.
- Perform routine maintenance on trailer hoppers to ensure optimal performance from your system.

Safety

NOTE:
If original decal becomes damaged or missing, order replacement decal part numbers 80503 or 80513.

ATTENTION:
- Open tarp before unloading
- Stay clear of moving parts
- Do not operate without shields
- Disconnect power to motor before servicing

PN 80503



PN 80513

Table of Contents

Inspection, Maintenance and Safety .....Page 2
Tools for Installation.....Page 3
Part Numbers and Diagrams.....Page 4-7
Installing Roltec Conversion.....Page 8-15
Installing Electrical Parts .....Page 16-21
Operating Instructions .....Page 22
Manual Override.....Page 23
Warranty .....Page 24

Tools

(most installations will require the following):

- Protective Eyewear
- Tape Measure
- Marking Pencil/Pen
- 3/8” Electric Drill
- 5/16” drill bit
- 3/16” Allen Wrench
- 1/2” socket
- 2 Vise Grip Pliers
- 9/16”, 1/2”, 7/16” combination wrench
- Heat Gun
- Wire cutter and crimper
- Welder
- Grinder
- Hammer

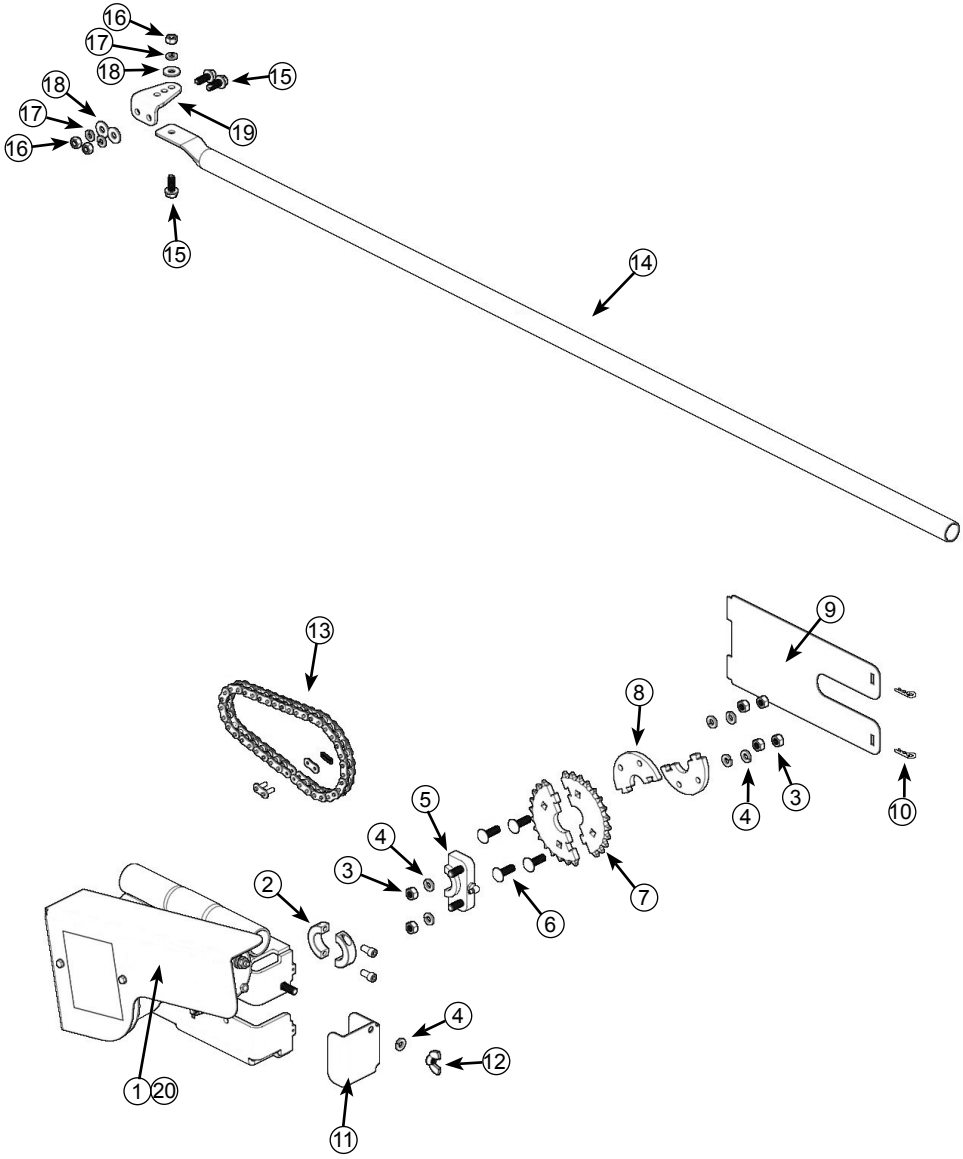
Part Numbers and Descriptions

(item numbers are used to reference parts in diagrams throughout this manual)

Item	Part #	Description
	80210	Electric Hopper Conversion (1 Conversion)
	80220	Electric Hopper Conversion (2 Conversions)
	80230	Electric Hopper Conversion (3 Conversions)
	80240	Electric Hopper Conversion (4 Conversions)
	80108	Semi/Trailer wire kit with dual pole connector
1	80222	Motor/Gearbox Assembly
2	80163	Set Collar
3	10921	Nut, 5/16" Hex, GR 2, Stainless Steel
4	10922	Washer Lock, 5/16", Stainless Steel
5	80091	Polyethylene Bushing Assembly
6	80065	Carriage Bolt, 5/16" x 1", Stainless Steel
7	80194	Split Sprocket
8	80196	Split Sprocket Hub
9	80160	Gearbox Cover Plate
10	80147	SST Hair Cotter Pin
11	80186	Chain Cover
12	80081	Wing Nut, 5/16", Stainless Steel
13	80153	Drive Chain
14	80187	Anchor Brace
15	10893	Bolt, 3/8" x 1" Self Tapping HHD Zinc Plated
16	10186	Nut, 3/8" Hex, Zinc Plated
17	10903	Washer, 3/8" Lock Zinc Plated
18	10185	Washer, 3/8" Flat, Zinc Plated
19	80162	Mounting Bracket
20	80155	Motor Cover (less motor)

NOTE: Some components are preassembled at the factory prior to shipping. The exploded diagram at right is for reference purposes and does not display parts in preassembled form. *Always keep electric conversion parts in proper operating condition. In the event replacement parts are needed, use only genuine Agri-Cover, Inc. replacement parts.*

ROLTEC™ Electric Hopper Conversion Parts Diagram



Part Numbers and Descriptions

(item numbers are used to reference parts in diagrams throughout this manual)

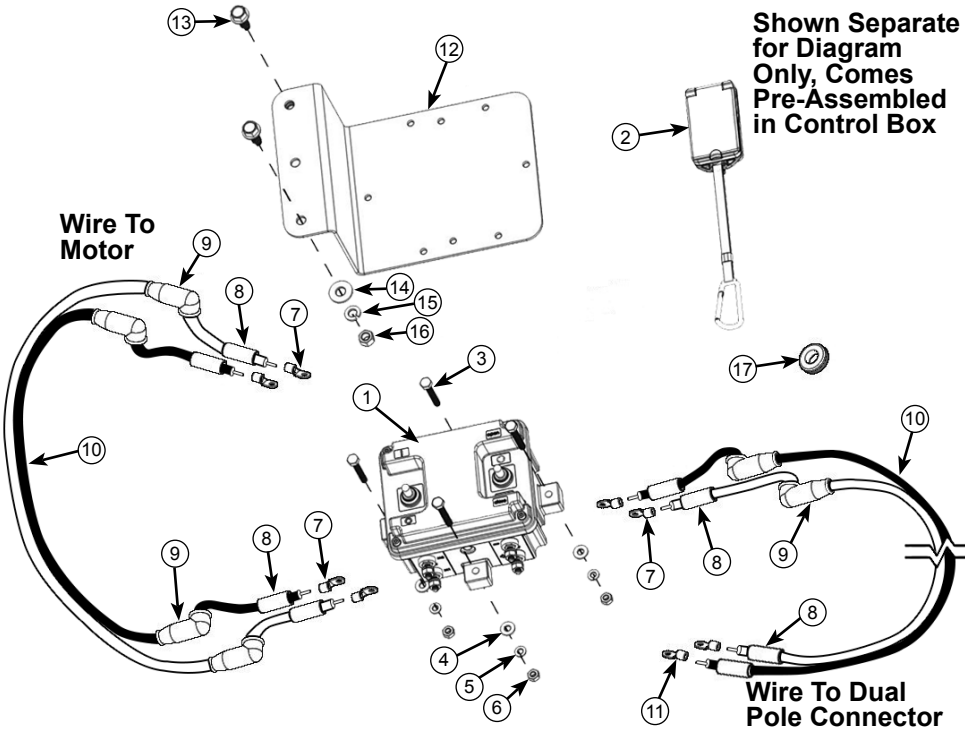
Item	Part #	Description
1	80239	Wireless Control Box
2	80207	Remote Key Fob w/ Lanyard
3	80235	Bolt, 1/4” x 1-3/4’ GR 5, Zinc Plated
4	30212	Washer, Flat 1/4”, Zinc Plated
5	30623	Washer, Lock 1/4”, Zinc Plated
6	30625	Nut, 1/4” hex, Zinc Plated
7	60598	Eyelet Terminal Ring, 1/4”
8	30650	Heat Shrink
9	70278	Terminal boots, Lug Type 8-2 Ga.
10	20046	Wire 6 Ga. 2 Strand
11	60496	Eyelet Terminal Ring 5/16”
12	80197	Remote Control Box Bracket
13	10893	Bolt, 3/8” x 1” Self Tapping HHD, Zinc Plated
14	10185	Washer, Flat 3/8”, Zinc Plated
15	10903	Washer, Lock 3/8”, Zinc Plated
16	10186	Nut, 3/8” Hex, Zinc Plated
17	80146	Rubber grommet, 11/16’ (inside diameter)

The following items are included in Part Number 80180

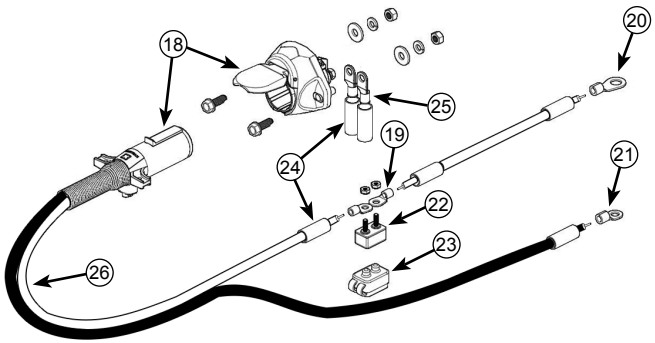
Item	Part #	Description
18	40918	HD Dual Pole Connector Socket & Plug kit (200 amp) includes bolts, washers, and nuts
19	30647	Eyelet Terminal Ring 6 Ga. #10 (for automatic breaker)
20	30314	Eyelet Terminal Ring 6 Ga. 1/2" for Battery Post (+)
21	30313	Eyelet Terminal Ring 6 Ga. 3/8" for Battery Post (-)
22	10739	Circuit Breaker, Automatic 12V 40A
23	30648	Breaker Cover Red
24	30649	Heat Shink Kit
25	30312	Eyelet Terminal Ring 6 Ga. 5/16" for Dual Pole Terminals
26	20046	Wire 6 Ga. 2 Strand

Always keep electric conversion parts in proper operating condition. In the event replacement parts are needed, use only genuine Agri-Cover, Inc. replacement parts.

ROLTEC® Electric Hopper Conversion Electric Parts Diagram



Semi Trailer Kit with Dual Pole Connector (Included in Part Number 80108)



STEP 1

NOTE: Prior to installing electric hopper conversion, perform all necessary maintenance on hopper doors.

Hold drive box on crank shaft to determine best location for motor based on ability to mount the anchor brace to a solid location. Motor assembly must be square to shaft. **NOTE: Mounting tab on Anchor Brace may need to be bent to ensure proper connection. The supplied Mounting Bracket may be used to help secure anchor brace to a solid location (Items 15-19 on page 4 and 5)**

Figure 1

STEP 2

Mark on shaft where attaching motor, **document this location,** and make 2 additional marks 2 inches each direction on shaft from original mark.

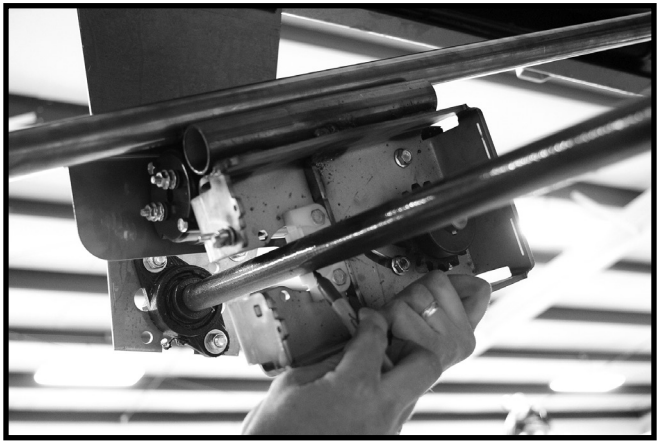


Figure 2

STEP 3

Between two additional marks made in previous step, clean shaft to bare metal for welding and to insure overall diameter is 1”. **NOTE: Ensure shaft is clean at location of polyethylene bushing assembly.** Once shaft is clean replace 1st mark (documented in Step 2) back on shaft, place set collar on outside of mark and secure to shaft with 3/16” Allen Wrench.

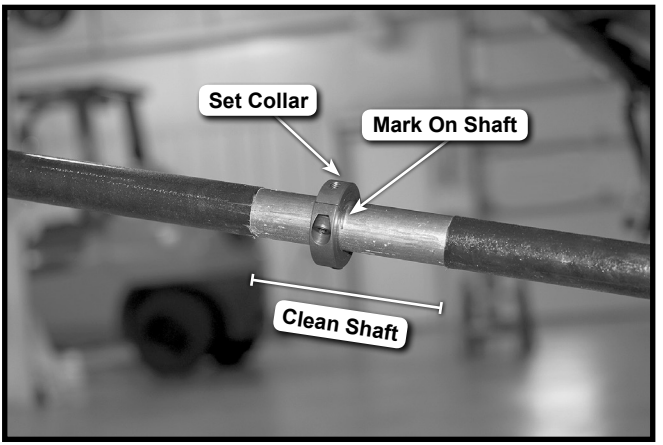


Figure 3

STEP 4

Place split sprocket and split sprocket hub adjacent to set collar and assemble split sprocket hub (towards hopper) use carriage bolts, lock washer and nuts to assemble.

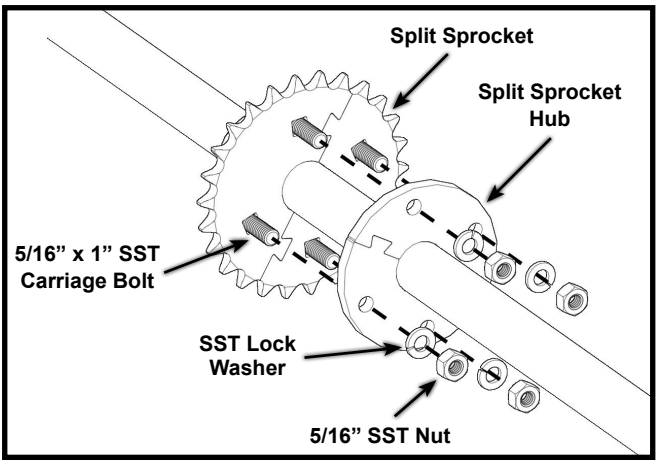


Figure 4

STEP 5

Clamp sprocket assembly to set collar to ensure sprocket stays square to drive shaft.

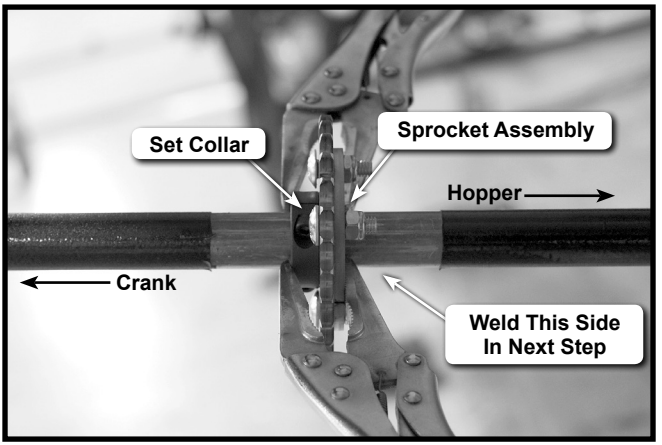


Figure 5

STEP 6

Weld sprocket assembly to drive shaft and let cool. Check sprocket teeth for weld splatter, deburr if necessary.

Figure 6

STEP 7

Loosen set collar and either remove from shaft or move it out of the way.

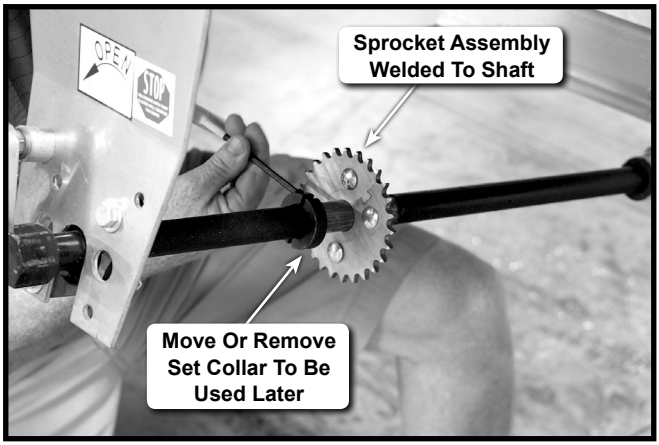


Figure 7

STEP 8

After sprocket assembly and shaft are cool to the touch place motor assembly back on shaft, insert second half of polyethylene bushing and secure to motor assembly with lock washer and nuts.

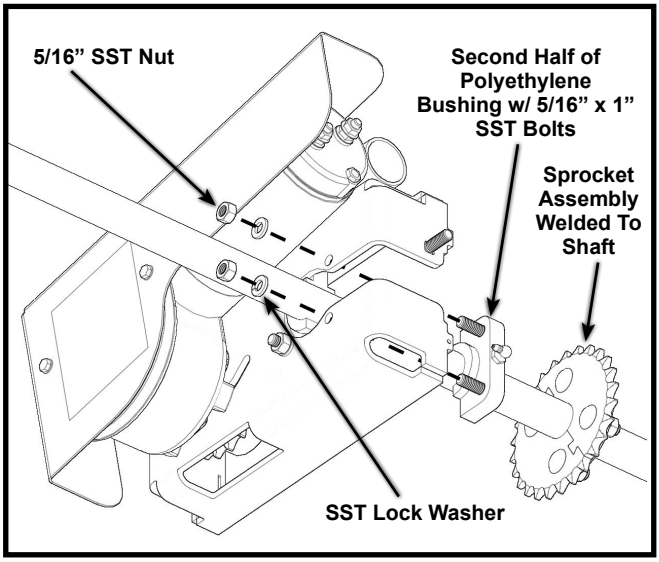


Figure 8

STEP 9

Move set collar tight against plastic bushing to square up motor and secure in place by tightening set screws, motor assembly will spin freely on the shaft.

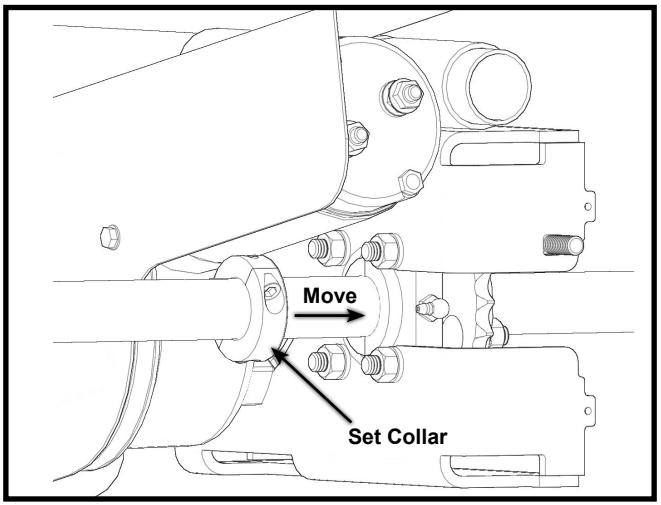


Figure 9

STEP 10

Slide anchor brace into motor assembly. Mounting tab may need to be bent to ensure a flat or secure fit at mounting location (Figure 10a).

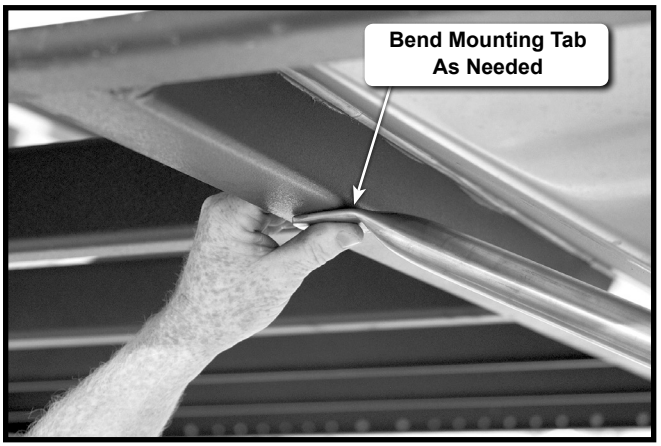


Figure 10a

The supplied Mounting Bracket may be used to help secure anchor brace to a solid location (Figure 10b).

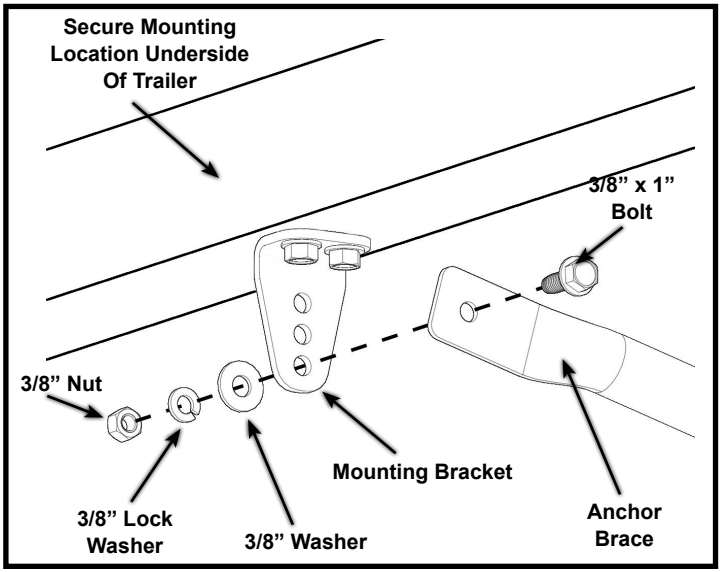


Figure 10b

Mark and cut off excess brace material (Figure 10c).

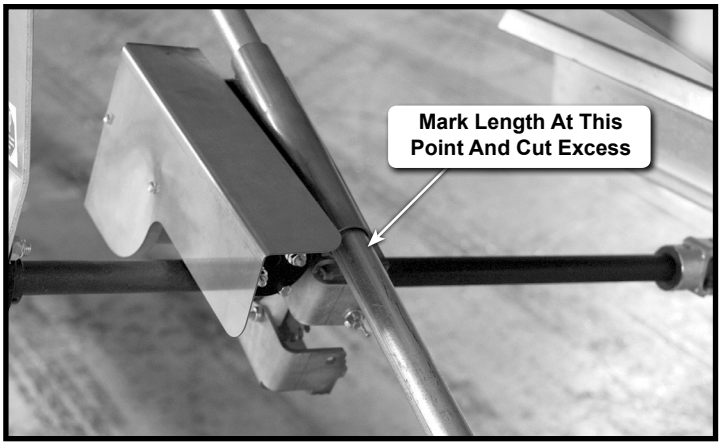


Figure 10c

STEP 11

Mark location of mounting tab on trailer, drill 5/16” hole and secure brace with 3/8” self threading bolt and back it with flat washer, lock washer, and nut where possible.

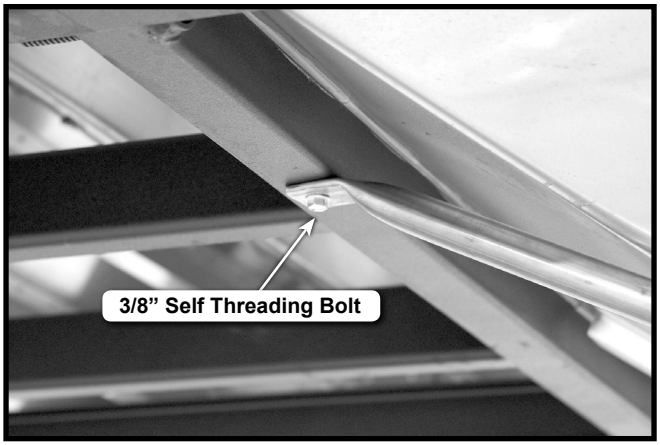
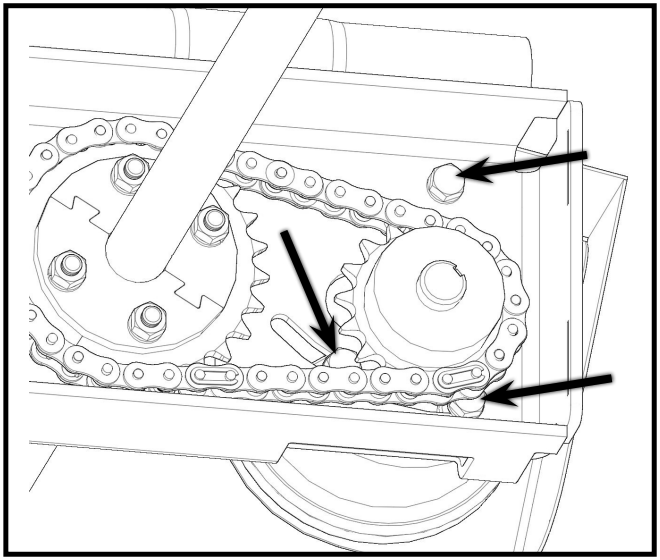


Figure 11

STEP 12

Place chain on sprockets, chain has two master links to ensure chain can be changed in any location of motor. Master links should be installed so clip is visible. The motor is used as the chain tensioner. To secure chain, slide motor away from shaft and tighten three bolts (see arrows in Figure 12) with 1/2” open end wrench and 1/2” socket.



STEP 13

Attach chain cover with wing nut and lock washer.

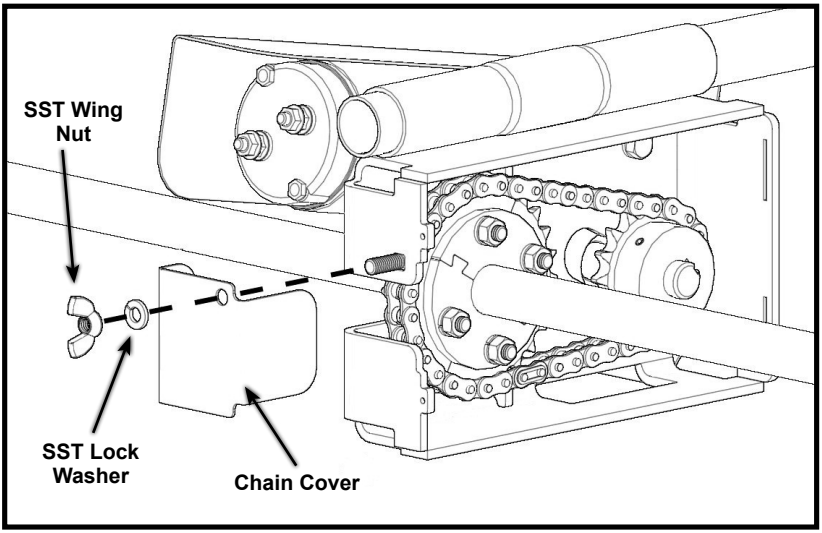


Figure 13

STEP 14

Attach Gearbox cover plate over shaft and insert tabs into slots in housing. Secure with stainless steel hair cotter pin. (See Figures 14a & 14b)

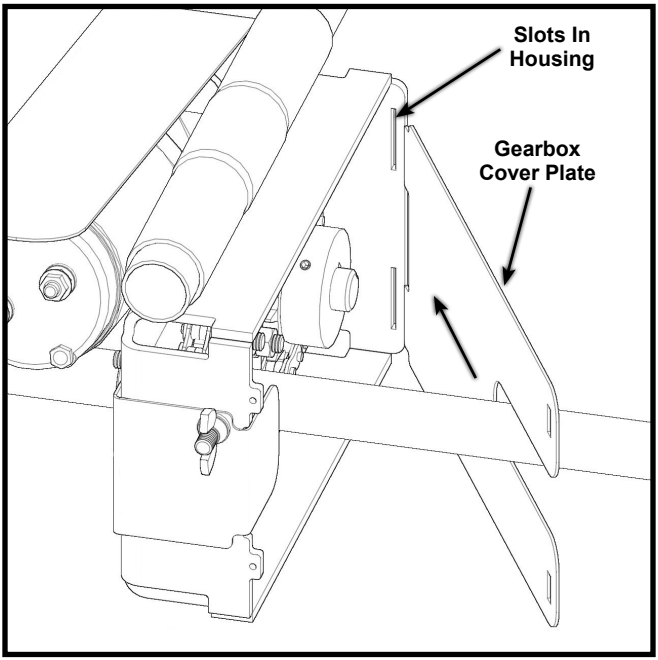


Figure 14a

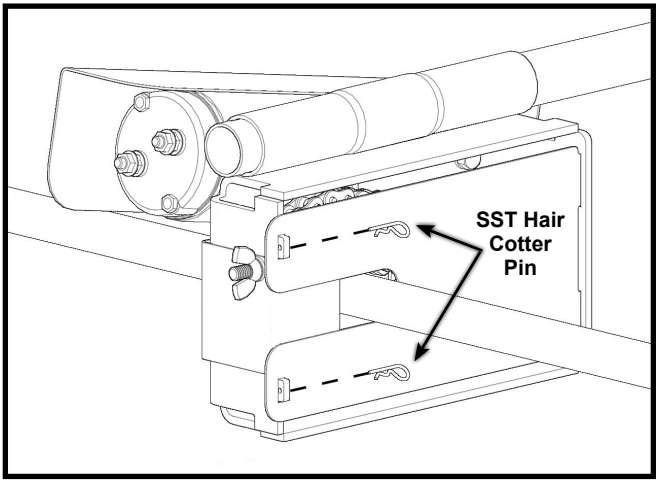


Figure 14b

STEP 15

PREPARE WIRING FOR CONNECTOR TERMINALS.

The illustration below shows terminal ring sizes for heavy gauge wires connecting to battery posts, circuit break, and motor terminals used in the following steps. Insulation is stripped off ends, heat shrink tubes are supplied for sealing and rubber boots are supplied for control box terminals. Always measure wire lengths to ensure you have plenty of wire when cutting and attaching terminals.

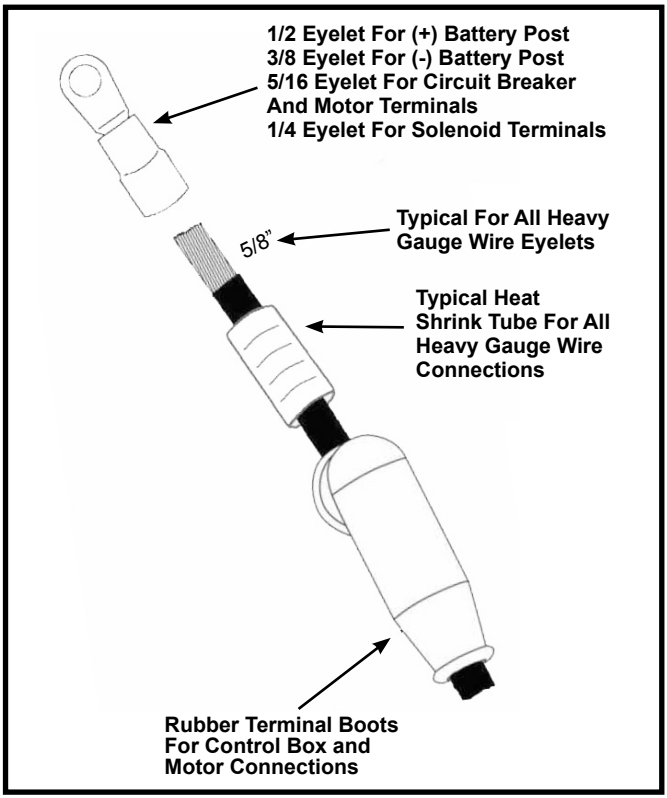


Figure 15

STEP 16

NOTE: If installing on trailer with existing electric tarp skip to step 17.

ELECTRIC WIRE ROUTING

A. Dual Pole Connector – Mount plug connector to suitable location on semi-tractor, adjacent to existing plugs. Mount socket to suitable location on trailer. Prep wires by stripping off insulation as needed. On wires at socket, slide heat shrink tube over wire, attach ring terminals and apply heat to shrink tubes. Bolt terminals tight. On wires at plug, insert bare wires into plug tubes and secure with set screws. See diagram below for detail assembly.

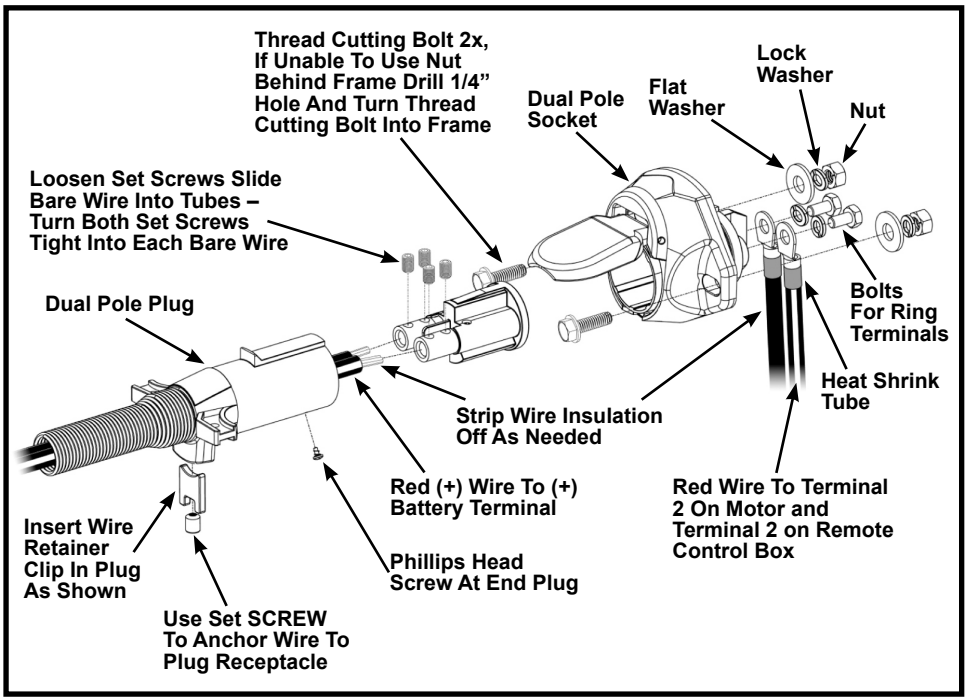

Thread Cutting Bolt 2x, If Unable To Use Nut Behind Frame Drill 1/4" Hole And Turn Thread Cutting Bolt Into Frame
Dual Pole Socket
Flat Washer
Lock Washer
Nut
Loosen Set Screws Slide Bare Wire Into Tubes – Turn Both Set Screws Tight Into Each Bare Wire
Dual Pole Plug
Bolts For Ring Terminals
Heat Shrink Tube
Strip Wire Insulation Off As Needed
Red (+) Wire To (+) Battery Terminal
Red Wire To Terminal 2 On Motor and Terminal 2 on Remote Control Box
Insert Wire Retainer Clip In Plug As Shown
Phillips Head Screw At End Plug
Use Set SCREW To Anchor Wire To Plug Receptacle

Figure 16

B. Select best routing for heavy gauge wire along frame towards cab near existing wire harness and up to the battery. Install circuit breaker in line on red(+) positive wire close to battery using 5/16" ring terminals and heat shrink.

C. Prep end of heavy black wire for battery (-) negative post with heat shrink tube and 3/8" ring terminal. Prep end of heavy red wire for battery (+) positive post with heat shrink tube and 1/2" ring terminal. **Do not connect wires to battery now.**

STEP 17

Note: Remote will come pre-programmed from the factory. Remote control boxes will come numbered from factory to coincide with function of remote each box has been programmed to. Refer to Command-10 owner's manual or the remote programming video at www.agricover.com/rolltarps/videos for re-programming and directions to program multiple remotes and receivers.

A. Attach remote control box bracket to a rigid location on trailer near electric hopper motor. Align remote control box, terminals down, with pre-drilled holes in bracket. Secure using bolts, washers, and nuts provided.

B. Select most suitable route for wires usually along frame with existing harness. Run heavy gauge wire from dual pole connector to remote control box. Prep wires by stripping off insulation as needed. Slide heat shrink tube over wire, attach ring terminals and apply heat to shrink tubes. Bolt terminals tight at dual pole connector. At remote control box slide rubber boots over wire and attached to terminals.

NOTE: When tightening nuts on terminals always hold base nut when tightening top nut. Do not over tighten.

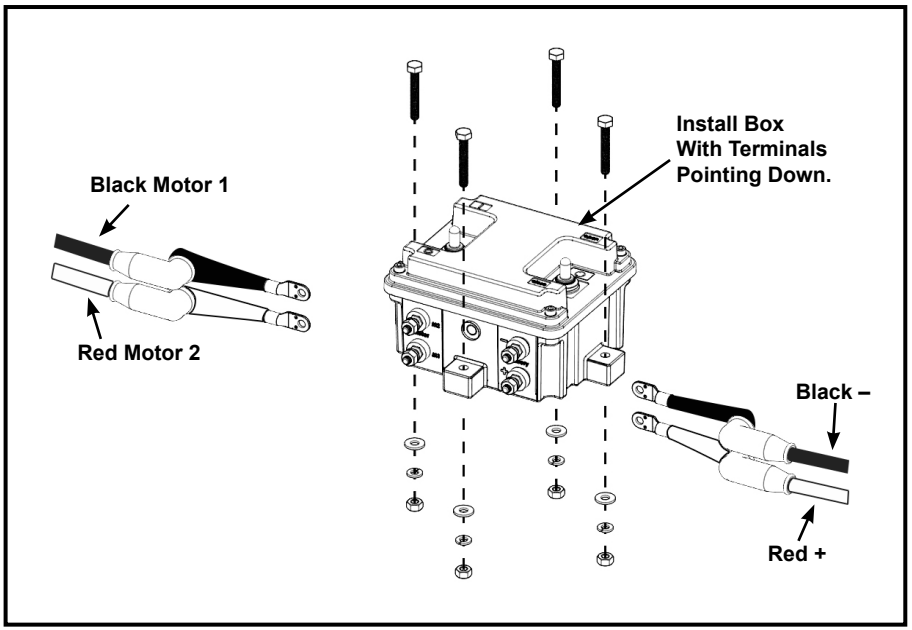
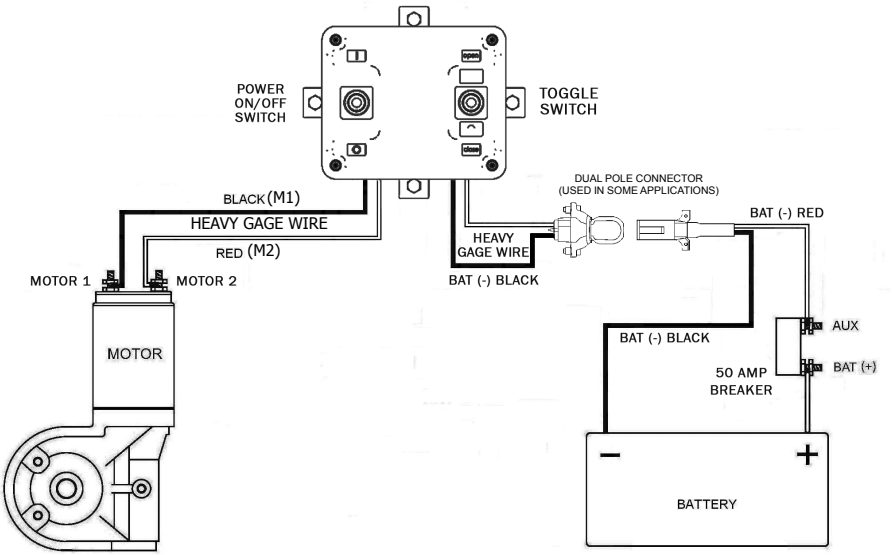


Figure 17

STEP 18

Run heavy gauge wire from remote control box to electric motor terminals. Prepare wire ends for motor terminals with heat shrink tubes, 5/16” ring terminals, and rubber boots. Attach BLACK wire to terminal 1 on motor. Attach RED wire to terminal 2. **Always hold base nut while tightening top nut.** At Battery, first attach RED wire to (+) positive post. Then attach BLACK wire to (-) negative post. Check power by activating switch to open position and closed position. When done, make sure all connections are secure and all wires are clear of sharp edges.



Note: Use dielectric grease (packet included) at all ellectrical connections.

WIRE SCHEMATIC

Figure 18

STEP 19

WIRING ADDITIONAL ELECTRIC HOPPER BOTTOMS

A. Attach remote control box bracket to a rigid location on trailer near electric hopper motor. Align remote control box, terminals down, with pre-drilled holes in bracket. Secure using bolts, washers, and nuts provided.

B. Select most suitable route for wires usually along frame with existing harness. Run heavy gauge wire from first remote control box to second remote control box. Prep wires by stripping off insulation as needed. Slide heat shrink over wire, attach ring terminals and apply heat to shrink tubes. Slide wire through rubber boots on first remote control box and attach wires to terminals on first remote control box. At second remote control box slide rubber boots over wire and attach to terminals. **NOTE: When tightening nuts on terminals always hold base nut when tightening top nut. Do not over tighten. (see Figure 19 on page 22).**

C. Run heavy gauge wire from remote control box to electric motor terminals. Prepare wire ends for motor terminals with heat shrink tubes, 5/16” ring terminals, and rubber boots. Attach BLACK wire to terminal 1 on motor. Attach RED wire to terminal 2. **Always hold base nut while tightening top nut.** At Battery, first attach RED wire to (+) positive post. Then attach BLACK wire to (-) negative post. Check power by activating switch to open position and closed position. When done, make sure all connections are secure and all wires are clear of sharp edges. **(see Figure 19 on page 22).**

Test operation. If motor runs Hopper in reverse of open and close positions on switch, reverse wires on motor terminals.

WIRING ADDITIONAL ELECTRIC HOPPER BOTTOMS

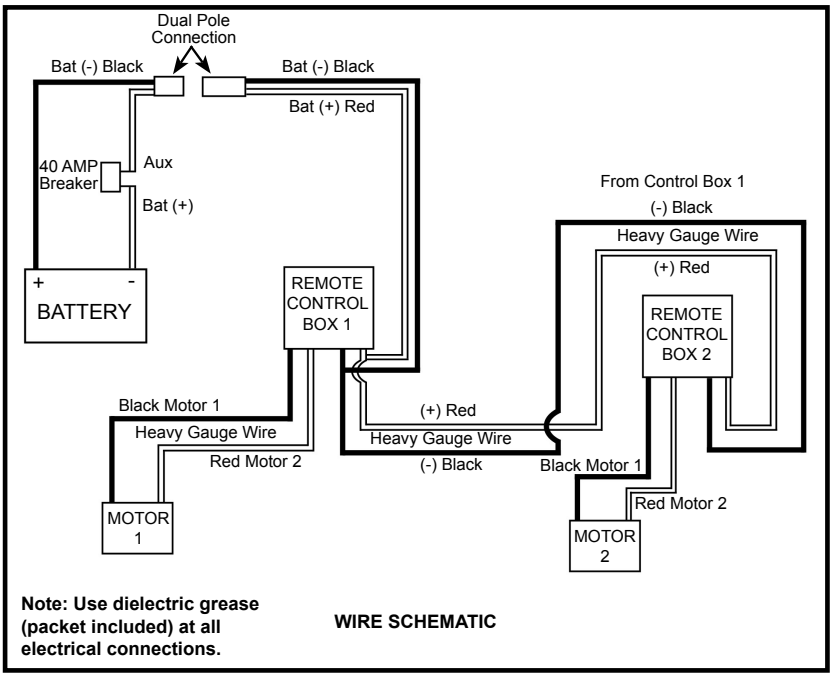


Figure 19

ELECTRIC MOTOR OPERATING INSTRUCTIONS

Note: Remote will come pre-programmed from the factory. Remote control boxes will come numbered to coincide with programmed modes of remote. Refer to Command-5 owner's manual or the remote programming video at www.agricover.com/rolltarps/videos for re-programming and directions to program multiple remotes and receivers.

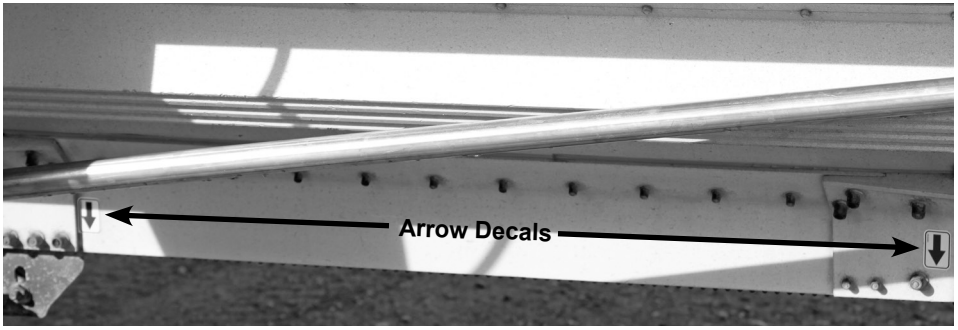
1: CLOSING HOPPER FROM OPEN POSITION
Push switch to the CLOSED position and hold. Visually view hopper gate position and release switch when hopper gate is fully closed.

2: OPENING HOPPER FROM CLOSED POSITION
Push switch to the OPEN position and hold. Visually view hopper gate position and release switch when hopper gate is at desired location.

NOTE: Electric hopper system is equipped with an automatic circuit breaker. Holding switch until circuit breaker trips is TOO LONG. To reduce unnecessary strain on components, always release switch before circuit breaker trips.

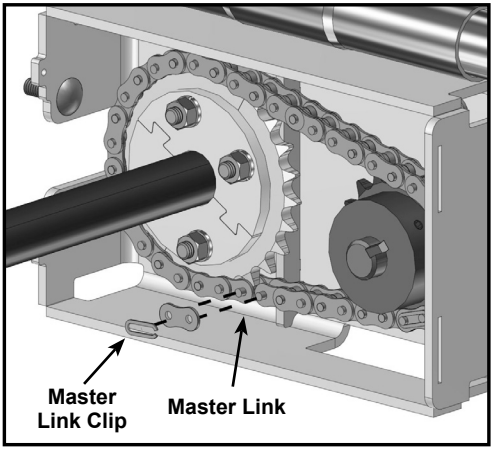
Electric Hopper conversion kits will come with 2 arrow decals (PN 80489) per hopper bottom. Decals are provided to aid operator in opening and closing hopper doors. Place decal on side of hopper when gate is at both fully open and fully closed positions (see image below).

NOTE: Location may very depending on trailer manufacturer, may not be applicable on some trailers.



TO ENABLE MANUAL OVERRIDE:

1. Disconnect Power to hopper motor.
2. Remove stainless steel hair cotter pins and back cover plate.
3. Loosen 3 bolts (see Figure 12), slide motor towards shaft to loosen chain
4. Remove clip from one of the two master links and remove master link from chain. Remove chain from sprockets and store components for later installation. (see illustration below)



5. Tighten 3 bolts loosened in step #3.
6. Attach back cover plate over shaft and insert tabs into slots in housing. Secure with stainless steel hair cotter pins. (see Figures 14a & 14b)
7. Hopper can now be used with trailer manufacturer's handle.

Always remove manufacturer's handle before connecting power back to hopper motor

MANUFACTURER'S LIMITED WARRANTY

Agri-Cover, Inc. extends the following limited warranty on its ROLTEC® ELECTRIC HOPPER CONVERSION to the original retail purchaser: Agri-Cover, Inc. warrants its ROLTEC® ELECTRIC HOPPER CONVERSION to be free from defects in material and workmanship under normal use for one (1) year from date of manufacture unless accompanied by proof of purchase.

ANY IMPLIED WARRANTY APPLICABLE TO THE ROLTEC® ELECTRIC HOPPER CONVERSION IS LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF MANUFACTURE UNLESS ACCOMPANIED BY PROOF OF PURCHASE. Agri-Cover Inc.'s sole obligation under this warranty or any implied warranty is limited to the repair or replacement at its option, of defective parts only. No labor or service allowance is given or implied. IN NO EVENT SHALL AGRI-COVER, INC. BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES. Some states do not allow limitations on how long an implied warranty lasts or exclusions of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

For warranty performance call our Customer Service Department at 701-251-1427 to determine if only a replacement part is needed or if the unit needs to be returned for inspection and repair. **Goods to be returned must have a pre-authorized RA# (Returned Authorization Number) – obtained by calling the number above.** Mark the number on the package and ship it freight prepaid to address below. Agri-Cover will pay freight to return goods to sender.

This warranty does not cover any failure due to abuse, misuse, alteration, neglect, improper assembly or installation, or improper maintenance.

This warranty gives you specific legal rights and you may have other rights which vary from state to state.

ACI
AGRI-COVER, INC.

Customer Satisfaction Guarantee

- Your satisfaction is our goal!
- Agri-Cover delivers dependable, high quality products
- Reliable on time shipping
- Complete Order Guarantee, no back orders
- Knowledgeable & courteous customer service
- Call Agri-Cover with any questions 1-800-233-4655

Tested. Trusted. Guaranteed.

Agri-Cover, Inc.

Customer Service Dept. 3000 Hwy. 281 SE, PO Box 508 Jamestown, ND 58402

701-251-1427 • 8:00 a.m. - 5:00 p.m., Central Time
Monday through Friday, except holidays.

©Copyright 2014, Agri-Cover Inc., all rights reserved. PN 80507_ D 052314